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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/796,008

03/10/2004

Tse-Hao Ko

KO53

4259

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BROWDY AND NEIMARK, P.L.L.C.
624 NINTH STREET, NW
SUITE 300
WASHINGTON, DC 20001-5303

EXAMINER

PIZIALI, ANDREW T

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

04/09/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/796,008	Applicant(s) KO, TSE-HAO	
	Examiner Andrew T. Piziali	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 16-19 is/are pending in the application.
- 4a) Of the above claim(s) 1-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/10/04 & 10/5/07 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/19/2008 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 17 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. The specification is silent regarding a carbon fabric having a fabric density ranging from 15x15 to 27x24 bundles per inch. Page 4, line 10 simply mentions a fabric with a density of 27x24, the specification does not specifically mention the claimed range.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,950,533 to McCullough in view of USPN 3,914,393 to Ram in view of USPN 4,248,036 to Barron.

McCullough discloses a flame retardant woven, densified carbon fabric filter wherein the carbon fibers have a carbon content of at least 65%, a nitrogen content of from 10 to 20%, and a limiting oxygen index of at least 40 (see entire document including column 2, lines 51-68, column 3, lines 56-6, column 4, lines 14-17 and 51-57, and column 5, lines 22-31).

McCullough does not appear to mention the oxygen content of the carbon fibers, but Ram discloses that it is known in the carbon fiber art to make carbon fibers with an oxygen content of at least about 7% (see entire document including column 3, lines 32-40). Ram also discloses that it is known in the art to carbonize at a temperature high enough to produce graphitic carbon (paragraph bridging columns 3 and 4). It is noted that graphitic carbon has a density of over 1.68 g/ml (about 2.2 g/ml). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the carbon fibers from any suitable carbon fiber material, such as that disclosed by Ram, because the carbon fibers disclosed by Ram are heat resistant and because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability and desired characteristics.

The substitution of known equivalent structures involves only ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958). When a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result. **KSR v. Teleflex**

McCullough does not appear to mention the fabric density, but McCullough does disclose that the fabric may be used as a hose covering (column 5, lines 22-31). Barron discloses that it is known in the hose covering art (see entire document including column 1, lines 33-46) to construct a woven fabric with a warp density of 27 to 32 and a weft density of 24 to 32 (see Examples). Barron specifically mentions a 27x24 fabric density (Example 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the fabric in any suitable fabric density, such as a warp density of 27 to 32 and a weft density of 24 to 32, motivated by the expectation of successfully practicing the invention of McCullough and because it is within the general skill of a worker in the art to select a known fabric density on the basis of its suitability and desired characteristics.

Regarding the claimed product-by-process limitation (forming the carbon fabric from oxidized fibers of polypropylene), it is the examiner's position that the article of the applied prior art is identical to or only slightly different than the claimed article. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a

Art Unit: 1794

product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been shifted to the applicant to show an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289 (Fed. Cir. 1983). The applied prior art either anticipated or strongly suggested the claimed subject matter. It is noted that if the applicant intends to rely on Examples in the specification or in a submitted declaration to show non-obviousness, the applicant should clearly state how the Examples of the present invention are commensurate in scope with the claims and how the Comparative Examples are commensurate in scope with the applied prior art.

Regarding the claimed wave shielding property, considering that the carbon fabric taught by the applied prior art is substantially identical to the claimed carbon fabric, it appears that the carbon fabric inherently possesses the claimed wave shielding property.

The Patent and Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 USPQ 431 (CCPA 1977).

Art Unit: 1794

6. Claims 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,950,533 to McCullough in view of USPN 4,861,809 to Ogawa in view of USPN 4,248,036 to Barron.

McCullough discloses a flame retardant woven, densified carbon fabric filter wherein the carbon fibers have a carbon content of at least 65%, a nitrogen content of from 10 to 20%, and a limiting oxygen index of at least 40 (see entire document including column 2, lines 51-68, column 3, lines 56-6, column 4, lines 14-17 and 51-57, and column 5, lines 22-31).

McCullough does not appear to mention the oxygen content of the carbon fibers, but Ogawa discloses that it is known in the carbon fiber art to make carbon fibers with an oxygen content of 3 to 10% (see entire document including column 2, lines 47-64). Ogawa also discloses that it is known in the art to use carbon fibers with a density of at least 1.5 g/cm^3 (at least 1.5 g/ml) (column 3, lines 11-29). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the carbon fibers from any suitable carbon fiber material, such as that disclosed by Ogawa, because the carbon fibers disclosed by Ogawa possesses low heat conductivity and because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability and desired characteristics.

The substitution of known equivalent structures involves only ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958). When a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result. **KSR**

v. Teleflex

McCullough does not appear to mention the fabric density, but McCullough does disclose that the fabric may be used as a hose covering (column 5, lines 22-31). Barron discloses that it is known in the hose covering art (see entire document including column 1, lines 33-46) to construct a woven fabric with a warp density of 27 to 32 and a weft density of 24 to 32 (see Examples). Barron specifically mentions a 27x24 fabric density (Example 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the fabric in any suitable fabric density, such as a warp density of 27 to 32 and a weft density of 24 to 32, motivated by the expectation of successfully practicing the invention of McCullough and because it is within the general skill of a worker in the art to select a known fabric density on the basis of its suitability and desired characteristics.

Regarding the claimed product-by-process limitation (forming the carbon fabric from oxidized fibers of polypropylene), it is the examiner's position that the article of the applied prior art is identical to or only slightly different than the claimed article. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a

Art Unit: 1794

product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been shifted to the applicant to show an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289 (Fed. Cir. 1983). The applied prior art either anticipated or strongly suggested the claimed subject matter. It is noted that if the applicant intends to rely on Examples in the specification or in a submitted declaration to show non-obviousness, the applicant should clearly state how the Examples of the present invention are commensurate in scope with the claims and how the Comparative Examples are commensurate in scope with the applied prior art.

Regarding the claimed wave shielding property, considering that the carbon fabric taught by the applied prior art is substantially identical to the claimed carbon fabric, it appears that the carbon fabric inherently possesses the claimed wave shielding property.

The Patent and Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 USPQ 431 (CCPA 1977).

Response to Arguments

7. Applicant's arguments filed 3/19/2008 have been fully considered but they are not persuasive.

Regarding the 112 rejection of claim 17, the applicant asserts that claim 17 has been amended to incorporate the limitation of claim 22. The examiner respectfully disagrees. The upper fabric density range (40x40) of claim 17 has been amended to the fabric density (27x24) of claim 22, but claim 22 did not mention a range. Therefore, the amendment does not overcome the 112 rejection. The specification is silent regarding a carbon fabric having a fabric density ranging from 15x15 to 27x24 bundles per inch. Page 4, line 10 simply mentions a fabric with a density of 27x24, the specification does not specifically mention the claimed range.

The applicant asserts that the carbon fabric of claim 16 consists of carbon fibers. The examiner respectfully disagrees. The claimed carbon fabric consists of (closed claim language) a fabric, but the fabric is "formed from" (open claim language) carbon fibers. Therefore, claim 16 does not preclude the fabric from including other material such as natural and/or synthetic fibers.

In response to applicant's argument that McCullough, Ram and Ogawa are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, McCullough, Ram and Ogawa are each in the field of applicant's endeavor, which is carbon fibers. More specifically, Ram, Ogawa, and applicant's invention relate to the conversion of synthetic material into carbon fibers while both McCullough and applicant's invention relate to carbon fiber fabrics.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T. Piziali whose telephone number is (571) 272-1541. The examiner can normally be reached on Monday-Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrew T Piziali/
Primary Examiner, Art Unit 1794